CLAIMS

1. A catheter for providing an embolic material at a desired location, comprising:

a flexible tubular member having a proximal end and a distal end, said tubular member including at least one ring of expansible material affixed to its outer surface less than 25 mm from said distal end.

2. The catheter according to claim 1, wherein said ring comprises a material that expands in volume when in contact with a liquid.

3. The catheter according to claim 2, wherein said ring comprises a hydrogel.

4. The catheter according to claim 2, wherein said ring comprises a hydrogel foam.

5. The catheter according to claim 5 wherein said ring is fully expanded after between 10 and 30 minutes of contact with a liquid.

6. The catheter according to claim 1 wherein said ring is affixed to said tubular member less than 10 mm from said distal end.

7. The catheter according to claim 1 wherein said ring is affixed to said tubular member less than 5 mm from said distal end.

8. The catheter according to claim 1 wherein said ring is affixed to said tubular member adjacent to said distal end.

9. The catheter according to claim 1 wherein said ring expands in response to an application of heat.

10. The catheter according to claim 1, further including multiple radioopaque markers spaced along the tubular member at predetermined intervals.

11. A method for treating a vascular malformation or tumor in a body, comprising:

a) providing a catheter, said catheter comprising a flexible tubular member having a proximal end and a distal end, the tubular member including at least one ring of expansible material affixed to its outer surface less than 25 mm from the distal end;

b) threading the catheter through a vessel until the distal end is positioned at a desired location in the body;

c) expanding the expansile ring such that the vessel is occluded at the location of the expansile ring; and

d) injecting an embolic material through the catheter and into the vascular malformation or tumor.

12. The catheter according to claim 11, wherein said ring comprises a material that expands in volume when in contact with a liquid.

13. The catheter according to claim 12, wherein said ring comprises a hydrogel.

14. The catheter according to claim 12, wherein said ring comprises a hydrogel foam.

15. The catheter according to claim 12 wherein said ring is fully expanded after between 10 and 30 minutes of contact with a liquid.

16. The catheter according to claim 12 wherein said ring expands in response to an application of heat.

17. The catheter according to claim 11 wherein said ring is affixed to said tubular member less than 10 mm from said distal end.

18. The catheter according to claim 11 wherein said ring is affixed to said tubular member less than 5 mm from said distal end.

19. The catheter according to claim 11 wherein said ring is affixed to said tubular member adjacent to said distal end.

20. The catheter according to claim 11 wherein the catheter includes a plurality of radioopaque markers spaced along the tubular member at predetermined intervals.

21. The method according to claim 20, further including the step of using the radioopaque markers for measurement purposes.